WHAT IS CLAIMED IS:

1.   A motion controlled handheld device comprising:

a user interface comprising a display having a viewable surface and operable to generate a current image;

5   a motion detection module operable to detect motion of the device within three dimensions and to identify components of the motion in relation to the viewable surface;

a device state tracking module operable to analyze the components to determine an environmental state of the device, the environmental state comprising a

10   motion state and an orientation of the device with respect to gravity; and

a controller operable to execute an application and to perform an operation of the application based on the environmental state.

2.   The motion controlled handheld device of Claim 1, wherein the motion

15   state indicates one of a supported state and an unsupported state.

3.   The motion controlled handheld device of Claim 2, wherein the device state tracking module is further operable to determine that the device is in the supported state by detecting that the components are each substantially constant.

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4.   The motion controlled handheld device of Claim 2, wherein the device state tracking module is further operable to determine that the device is in the unsupported state by detecting that a variance over time of at least one of the components exceeds a threshold.

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5.   The motion controlled handheld device of Claim 1, wherein:

the device state tracking module is further operable to determine that the motion state of the device is free fall; and

the controller is operable to power down electrical components of the device

30   in response to the determined motion state of free fall.

6.   The motion controlled handheld device of Claim 1, wherein the orientation of the device with respect to gravity indicates one of a face down orientation and a face up orientation.

5   7.   The motion controlled handheld device of Claim 1, wherein:

the device is a telephone;

the application support a currently established telephone call; and

the controller is operable to enable a speaker phone feature in response to the device state tracking module determining that the motion state indicates a supported

10   state and the orientation of the device with respect to gravity indicates a face up orientation.

8.   The motion controlled handheld device of Claim 1, further comprising:

a gesture database comprising a plurality of gestures, each gesture defined by

15   a motion of the device with respect to a first position of the device;

a motion response module operable to compare movement of the device against the gestures to determine whether a potentially matching gesture and the movement are within a gesture precision threshold; and wherein

the controller is operable to set the gesture precision threshold based on the

20   environmental state of the device.

9.   The motion controlled handheld device of Claim 8, further comprising:

a first accelerometer operable to detect acceleration along a first axis;

a second accelerometer operable to detect acceleration along a second axis, the second axis perpendicular to the first axis; and

5   a third accelerometer operable to detect acceleration along a third axis, the third axis perpendicular to the first axis and perpendicular to the second axis; and wherein:

the gesture database further defines each of the gestures using a sequence of accelerations;

10   the motion detection module is further operable to detect motion of the device using accelerations measured by the first accelerometer, the second accelerometer, and the third accelerometer; and

the controller is further operable to match the accelerations measured by the motion detection module against gesture definitions in the gesture database to identify

15   particular ones of the gestures.

10.   The motion controlled handheld device of Claim 1, wherein the environmental state further comprises a state history incorporating one or more prior environmental states of the handheld device.

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11.   A method for modeling the environment of a handheld device comprising:

providing a user interface comprising a display having a viewable surface and operable to generate a current image;

5   executing an application;

detecting motion of the device within three dimensions;

identifying components of the motion in relation to the viewable surface;

analyzing the components to determine an environmental state of the device, the environmental state comprising a motion state and an orientation of the device

10   with respect to gravity; and

performing an operation of the application based on the environmental state.

12.   The method of Claim 11, wherein the motion state indicates one of a supported state and an unsupported state.

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13.   The method of Claim 12, further comprising determining that the device is in the supported state by detecting that the components are each substantially constant.

20   14.   The method of Claim 12, further comprising determining that the device is in the unsupported state by detecting that a variance over time of at least one of the components exceeds a threshold.

15.   The method of Claim 11, wherein the orientation of the device with

25   respect to gravity indicates one of a face down orientation and a face up orientation.

16.   The method of Claim 11, further comprising:

maintaining a gesture database comprising a plurality of gestures, each gesture defined by a motion of the device with respect to a first position of the device;

setting a gesture precision threshold based on the environmental state of the device; and

comparing movement of the device against the gestures to determine whether a potentially matching gesture and the movement are within the gesture precision threshold.

17.   Logic for controlling a handheld device, the logic embodied in a computer readable medium and operable when executed to perform the steps of:

providing a user interface comprising a display having a viewable surface and operable to generate a current image;

5   executing an application;

detecting motion of the device within three dimensions;

identifying components of the motion in relation to the viewable surface;

analyzing the components to determine an environmental state of the device, the environmental state comprising a motion state and an orientation of the device

10   with respect to gravity; and

performing an operation of the application based on the environmental state.

18.   The logic of Claim 17, wherein the motion state indicates one of a supported state and an unsupported state.

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19.   The logic of Claim 18, further operable to determine that the device is in the supported state by detecting that the components are each substantially constant.

20   20.   The logic of Claim 18, further operable to determine that the device is in the unsupported state by detecting that a variance over time of at least one of the components exceeds a threshold.

21.   The logic of Claim 17, wherein the orientation of the device with

25   respect to gravity indicates one of a face down orientation and a face up orientation.

22.   The logic of Claim 17, further operable when executed to perform the steps of:

maintaining a gesture database comprising a plurality of gestures, each gesture defined by a motion of the device with respect to a first position of the device;

5   setting a gesture precision threshold based on the environmental state of the device; and

comparing movement of the device against the gestures to determine whether a potentially matching gesture and the movement are within the gesture precision threshold.

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23.   A motion controlled handheld device comprising:

means for providing a user interface comprising a display having a viewable surface and operable to generate a current image;

means for executing an application;

5   means for detecting motion of the device within three dimensions;

means for identifying components of the motion in relation to the viewable surface;

means for analyzing the components to determine an environmental state of the device, the environmental state comprising a motion state and an orientation of the

10   device with respect to gravity; and

means for performing an operation of the application based on the environmental state.